

REMARKS

Claims 41, 42, 45-48, and 50-60 remain pending in the application upon entry of this amendment. Favorable reconsideration of the application, as amended, is respectfully requested.

Allowable Subject Matter

Applicant acknowledges the Examiner's conclusion that original claim 45 recites allowable subject matter and would be allowed if rewritten in independent form including the limitations of the base claim and any intervening claims. In accordance with the Examiner's comments, new claim 60 has been submitted, which corresponds to claim 45 rewritten as instructed in independent form. Claim 60, therefore, should be allowed.

Amended Independent Claim 41 Is Allowable

Independent claim 41, as amended, is similarly allowable. Specifically, claim 41 has been amended to recite in part the step of "producing on said surface of said metallic substrate or on top of said buffer layer grooves in a direction of current flow". None of the references cited by the Examiner discloses or suggests this feature, particularly with respect to the orientation of the grooves in a direction of current flow.

In concluding that original claim 45 recites allowable subject matter, the Examiner states: "The prior art of record neither teaches nor fairly suggest applicant's groove structure, its dimensions and its density per the instant claim." (Office Action at page 6.) In a telephone conversation on October 24, 2008, the Examiner clarified that the basis for identifying claim 45 as allowable was due to the specific dimensions recited therein. Applicant submits, however, that the prior art does not disclose or suggest more generally "grooves in a direction of current flow" as now claimed. Accordingly, claim 41 should be allowed.

In Applicant's method, the grooves are formed intentionally as part of a distinct "polishing step". Furthermore, the "grooves are oriented along the direction of the current flow, that is the direction of the tape." (Application at page 12, lines 9-18.) The Application further states that "due to the groove structure, which causes an anisotropic

diffusivity and therefore influences the growth of the buffer layer grains such that an elongated shape develops, grains with large aspect ratios are produced in the buffer layer.” (Application at page 12, lines 30 to page 13, line 1.) The grooves, therefore, are oriented “in a direction of current flow” (claim 41) so as to enhance the elongated grain structure of the superconductor material.

In support of his position that grooves generally are known, in the Office Action the Examiner cites to Lee et al., U.S. Patent No. 6,114,287 (Lee), specifically at col. 3, lines 27-37 and Figs. 2 and 3. (Office Action at page 7.) The grooves in Lee differ from the grooves formed in Applicant’s method.

Specifically, at the passage cited by the Examiner, the grooves are described as unwanted surface irregularities that reduce the current capabilities of the superconductor. Lee states that “it is highly desirable to eliminate, or at least minimize, these irregularities so as to achieve a more reproducible and useful superconductor performance.” (Col. 3, lines 27-37; see also col. 3, lines 52-55.) Figs. 1 and 3 further illustrate that the grooves described in Lee are indeed irregular and not oriented in any organized fashion. Lee, therefore, discloses a step intended to eliminate or reduce the grooves as part of the process. (See col. 9, line 63 to col. 10, line 10.)

In contrast to the claimed invention, therefore, the grooves of Lee are unwanted irregularities that impede current flow, and therefore are subjected to an elimination process. ***Lee thus teaches away from providing grooves.*** In addition, the grooves of Lee are not oriented in any particular manner (see Figs. 1 and 3), and indeed are not oriented specifically in a direction of the current flow as recited in amended claim 41. Fig. 2 of Lee, also referenced by the Examiner, does not depict grooves in the substrate or buffer layer at all, but rather depicts unwanted deposits of rough metallic oxides, which likewise are to be avoided as they impede current flow. (See col. 3, lines 56-59.)

Accordingly, Lee does not disclose or suggest the step of “producing on said surface of said metallic substrate or on top of said buffer layer grooves in a direction of current flow”, as recited in amended independent claim 41. The other references cited by the Examiner also do not disclose such grooves, and the Examiner does not indicate

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otherwise. Claim 41, therefore, is allowable, and the claims that depend from claim 41 are allowable for at least the same reasons.

Conclusion

Accordingly, claims 41, 42, 45-48, and 50-60 are believed to be allowable, and the application is believed to be in condition for allowance. A prompt action to such end is respectfully requested.

Should the Examiner feel that a telephone interview would be helpful to facilitate favorable prosecution of the above-identified application, the Examiner is invited to contact the undersigned at the telephone number provided below.

If there are any additional fees resulting from this communication, including any extension or additional claims fees, charge the same to our Deposit Account No. 18-0988, our Docket No. ABAGP0110US. In the event an extension of time is required, please regard this communication as including a petition for such extension of time.

Respectfully submitted,

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DATE: October 27, 2008

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